

**GEORGIA PERIMETER COLLEGE
LEARNING SUPPORT
COMPREHENSIVE COURSE GUIDE**

COURSE ABBREVIATION	MATH 0098
COURSE TITLE	INTERMEDIATE ALGEBRA
CREDIT HOURS	4 hours institutional credit (does not count toward a degree)
PREREQUISITES	MATH 0097 or placement by examination

CATALOG DESCRIPTION

This course is designed to prepare students for college level mathematics courses. Topics include rational expressions, graphing lines and parabolas, function notation, integral and rational exponents, solving absolute value and quadratic equations and inequalities, solving rational and radical equations, problem solving involving linear equations, rational equations, quadratic equations, and systems of equations in two variables, and writing equations of lines. Additional topics include operations with radicals and complex numbers, geometric concepts, and calculator usage.

REQUIRED TEXT

Beginning and Intermediate Algebra, 4th Ed. By Lial, Hornsby, & McGinnis. Addison Wesley Longman.
(A TI-83 or 84 graphing calculator is required.)

OPTIONAL MATERIALS AND HELP FOR STUDENTS

- Free tutors in Learning and Tutoring Center (formerly ISS)
- My MathLab.com Access Code (If required, indicate this in the syllabus—free with new textbook or may be purchased separately for used text; instructor must provide course ID)
- Student Solutions Manual for Beginning and Intermediate Algebra, 4th Ed. Lial, Hornsby & McGinnis, Addison-Wesley.
- Video Lectures on DVD with Solution Clips for Beginning and Intermediate Algebra, 4th Ed., Lial, Hornsby & McGinnis, Addison Wesley.
- Video Lectures on CD with Solution Clips for Beginning and Intermediate Algebra, 4th Ed., Lial, Hornsby & McGinnis, Addison-Wesley.
- MathXL Tutorials on CD for Beginning and Intermediate Algebra, 4th Ed., Lial, Hornsby & McGinnis, Addison-Wesley.

SUPPLEMENTARY MATERIALS

- In the non-print section of the LRC: videotapes and CD ROMS of the videotapes
- On the Internet: My MathLab.com (free user ID with new textbook or may be purchased separately, must obtain course ID from instructor)
- By phone: Math Tutor Center (a 1-800-phone number available only after student has logged into the MyMathLab.com)

GENERAL COURSE PURPOSE

To provide the student with the necessary skills and techniques to be successful in college level mathematics as well as to provide the student with skills to apply these concepts to real world problems.

COURSE CONTENT

1. Review of selected MATH 0097 topics
2. Rational Expressions and Equations
3. Absolute value and quadratic equations in one variable
4. Radical expressions and equations and complex numbers
5. Absolute value and non-linear inequalities in one variable
6. Linear equations in two variables
7. Geometric concepts
8. Function notation and parabolas

ENTRY LEVEL COMPETENCIES

Upon entering this course, the student should be able to do the following:

1. Apply or recognize properties of real numbers (commutative, associative, and distributive)
2. Classify real numbers as integers, rational, or irrational
3. Perform the four arithmetic operations with signed numbers
4. Determine the absolute value of a numerical expression
5. Construct correct expressions using algebraic symbols and notations from statements
6. Solve applications whose mathematical models are linear or factorable quadratics

7. Add, subtract, multiply, divide a monomial, and factor polynomials
8. Solve the following types of equations: linear, factorable quadratic, linear fractional and linear literal
9. Solve linear inequalities and write the solution set in interval notation. Graph the solution set on a number line
10. Graph linear equations in two variables
11. Solve problems involving square roots, absolute value, order of operations, and scientific notation with the aid of a calculator. Use the exponent key
12. Apply laws of exponents for integral exponents
13. Solve problems involving the Pythagorean Theorem, area, perimeter, and volume, formulas for triangles, rectangles, squares, circles, and trapezoids
14. Recognize and apply angle relationships within triangles, quadrilaterals, vertical, and alternate interior angles

EXPECTED EDUCATIONAL RESULTS

As a result of completing this course, the student will be able to do the following:

1. Use algebraic symbols and notation to make meaningful statements
2. Add, Subtract, Multiply, and divide rational expressions
3. Solve applications for which linear equations, quadratic equations, and linear systems are mathematical models
4. Solve the following types of equations:
 - a. Quadratic with real and non-real solutions
 - b. Absolute value of the form $ax + b = \text{constant}$
 - c. Rational leading to a linear or quadratic
 - d. Polynomial of degree higher than two by factoring
 - e. Radical leading to linear or quadratic
5. Solve inequalities, write solution set in interval notation, and graph the following types:
 - a. Factorable quadratic
 - b. $|ax + b| < \text{or} > \text{constant}$
 - c. Factorable polynomial of degree higher than two
6. Solve a system of linear equations in two variables (having no, one, or many solutions) by graphing, substitution, or elimination
7. Perform operations with complex numbers (excluding division)
8. Apply properties of exponents with integral and rational exponents
9. Perform the four basic operations with radicals (excluding rationalizing)
10. Solve problems where students have to apply comprehension of basic geometric concepts including the Pythagorean Theorem, formulas for area and perimeter of rectangles, squares, and triangles
11. Perform the following activities with lines:
 - a. Use the distance and midpoint formulas
 - b. Graph equations in standard form and slope-intercept form
 - c. Compute the slope given two points
 - d. State the slope given an equation
 - e. State if lines are parallel or perpendicular from given information
 - f. Write the equation of a line given information
12. Use a graphing calculator
13. Understand function notation
14. Graph parabolas using a table of values and plotting points

COURSE REQUIREMENTS

To pass MATH 0098, students must satisfactorily meet the following requirements:

1. Complete class assignments, appropriate laboratory assignments, and other course expectations
2. Average seventy percent (70%) or higher
3. Participate in class
4. Attend class regularly
5. Pass the exit test (COMPASS with a score of 37 or higher) unless notified by your instructor as exempt. Students who do not take their required exit examination must repeat the course. All students who do not pass the exit test on the first try may take a retest one time only.

NOTE: Grades of A, B, and C indicate satisfactory work.

UNIVERSITY SYSTEM EXIT EXAM

To be permitted to take the Compass exit examination, students must present a picture I.D. that displays their social security number or a picture I.D. and an official document that displays their social security number. Students who do not pass the Compass exit examination may take it again one time.

POLICIES

1. **Attempts:** Students must complete MATH 0097 and MATH 0098 in three attempts or they will be suspended from Georgia Perimeter College and all University System institutions for one (1) year. Attempts are cumulative within the Regent's System.
2. **Attendance:** In accordance with GPC Policy, instructors will keep accurate attendance records. Students are expected to attend all classes regularly and punctually. Students who arrive late should report to the instructor at the end of class.
3. **Withdrawals:**
Note: If you withdraw or are withdrawn from a class, your financial aid eligibility may be affected.
Always check with a financial aid counselor before you stop attending a class.
 - a. When withdrawals are initiated by the mid-term deadline, students will receive a grade of W.
 - b. Students who are taking both Learning Support courses and collegiate-level courses and withdraw or are withdrawn from one or more required Learning Support course before mid-semester will also be withdrawn from all collegiate-level courses except GPCS 1010, HEDS 1011 and activity PE classes. They may, however, drop the collegiate-level course and remain in the Learning Support course(s).
 - c. Students who are taking only Learning Support courses may withdraw from one or more of these courses to reduce course load.
 - d. Students who withdraw from a Learning Support course after mid-term will receive a grade of WF.
 - e. Learning Support mathematics instructors **will not** withdraw students from their classes under any circumstances. Withdrawals from Learning Support mathematics classes are solely the responsibility of the student.
4. **Make-up work:** The instructor will determine the make-up policy for this course.
5. **Grades:** Grades in Learning Support classes will be assigned as follows:
A= 90-100 (and pass the COMPASS if required to take it)
B= 80-89 (and pass the COMPASS if required to take it)
C =70-79 (and pass the COMPASS if required to take it)
IP = 60-69 (or did not pass the COMPASS if required to take it)
F = 0-59
W = Withdrawal by mid-term
WF = Student initiated withdrawal after mid-term
Note: Students who earn a grade of IP, F, W< or WF must repeat the course. All grades except W count as attempts. Grades of A, B, and C are successful attempts. Grades of IP, F, and WF are unsuccessful attempts.
6. State and federal legislation protect all copyrighted software. Any reproduction of this software without written permission is a violation of the law.
7. **Academic Respect:** The College exists to foster educational excellence. To this end, a classroom atmosphere, which supports learning, must be maintained. Students are expected to be active, attentive participants in the class. Students are also expected to abide by class policies and procedures and to treat faculty and other students in a professional, respectful manner. Students are expected to be familiar with the student conduct code published in the Student Handbook.

Effective Fall 2011